Proposed Report [1]

DEPARTMENT OF THE ARMY
CHIEF OF ENGINEERS
2600 ARMY PENTAGON
WASHINGTON, D.C. 20310-2600

DAEN (1105-2-10a)

SUBJECT: Los Angeles River Ecosystem Restoration, Los Angeles, California

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on ecosystem restoration in and along the Los Angeles River in Los Angeles, California. It is accompanied by the report of the district and division engineers. This report is in partial response to a resolution by the Senate Committee on Public Works approved 25 June 1969, requesting review of "the report of the Chief of Engineers on the Los Angeles and San Gabriel Rivers and Ballona Creek, California published as House Document numbered 838, Seventy-sixth Congress and other pertinent reports, with a view to determining whether any modifications contained therein are advisable at the present time, in the interest of providing optimum development of all water and related land resources in the Los Angeles County Drainage Area." Further authority is provided by Section 4018(a) of the Water Resources Development Act (WRDA) of 2007, Public Law 110-114, 121, Stat. 1041, 1175-1176, which provides authorization for a study "for environmental ecosystem restoration, flood risk management, recreation, and other aspects of Los Angeles River revitalization that is consistent with the goals of the Los Angeles River Revitalization Master Plan published by the City of Los Angeles…." The City of Los Angeles is the non-federal cost sharing sponsor for the project. Preconstruction engineering and design activities will be continued under the authority provided by the resolutions cited above.

2. The Los Angeles River is the 51-mile-long backbone of an 870-square-mile watershed. It once anchored a system of riparian and freshwater marsh habitat that carried seasonal rains and subterranean flows across the coastal plain to the Pacific Ocean. Over time, a cycle of urban development, flooding, and channelization has diminished aquatic and riparian habitat, reduced plant and wildlife diversity, and disconnected the river from its historic floodplain and nearby significant ecological zones. An 11-mile stretch of the river from Griffith Park to Downtown Los Angeles was identified as having the greatest potential for restoration.

3. The western cottonwood-willow forest association, a riparian ecosystem habitat type once prominent in the Los Angeles River, has been identified as one of the rarest forest types in North America, and one of most endangered ecosystems in the United States. The Los Angeles River study area is within a globally scarce Mediterranean ecosystem which is characterized by hot, dry summers and mild, wet winters and supports evergreen or drought deciduous shrublands and associated habitats. Over 90 percent of the riparian habitat and over 95 percent of the region's wetlands including freshwater marsh have been lost. Due to this large-scale habitat conversion, natural riparian communities persist only as isolated remnants of what was once a vast,

[1] This report contains the proposed recommendation of the Chief of Engineers. The recommendation is subject to change to reflect Washington level review and comments from Federal and State agencies.

interconnected system of rivers, streams, marshes, and vegetated washes. Although they occupy a very small area, these riparian ecosystems in the southwest are very important systems as they support the majority of biodiversity in the region through their ecological and hydrologic connectivity. Approximately 80 percent of all wildlife uses the riparian ecosystem at some life stage, with more than 50 percent of bird species nesting primarily in riparian habitats. Restoration in the study area has the potential to create and improve habitat for select native fish species including the federally threatened Santa Ana sucker. In addition, the Los Angeles River was selected to be one of seven nationwide first-phase pilots for the Environmental Protection Agency's (EPA) Urban Waters Federal Partnership.

4. The reporting officers recommend a plan authorizing ecosystem restoration and recreation for an approximately 11-mile stretch of the Los Angeles River, from Griffith Park to Downtown Los Angeles, Los Angeles County, California. The recommended plan for ecosystem restoration includes restoration of habitat within 719 acres within and adjoining the river through the following measures and features:

- Riparian habitat corridor restoration throughout the 11 miles
- Restoration of the Arroyo Seco confluence
- Restoration of the Verdugo Wash confluence
- Restoration of riparian habitat, the historic wash and its braided channels in the Los Angeles Trailer and Container intermodal facility site
- Removal of channel concrete and riverbed restoration for 0.75 miles
- Restoration of freshwater marsh in the Los Angeles State Historic Park
- Restoration of riparian habitat and reconnection to the historic floodplain in Taylor Yard
- River widening
- Restoration of 13 minor tributaries through stream day lighting
- Establishment of side channels
- Removal of invasive vegetation throughout the project area

The restoration measures will substantially increase valley foothill riparian strand and freshwater marsh habitat, reestablish connectivity between the river and its historic floodplain, and restore habitat connections to significant habitat areas of the Santa Monica, Verdugo and San Gabriel Mountains. Monitoring and adaptive management of the environmental resources is required to ensure success of the project. The monitoring and adaptive management period will begin upon completion of construction of each feature and continue until ecological success criteria are met, but for no more than ten years. The recommended plan is a deviation from the National Ecosystem Restoration (NER) Plan and is the Locally Preferred Plan (LPP) for ecosystem restoration with a corresponding recreation plan. The recreation features include trails and other features for passive recreation that are compatible with the restored environment.

5. The LPP is greater in cost and scope than the NER plan. Based upon October 2015 price levels, the NER Plan has an estimated total first cost for ecosystem restoration of $694,114,000 and provides restoration outputs of 5,989 average annual habitat units (AAHUs) measured using

the Combined Habitat Assessment Protocols (CHAP) approach. The LPP has an estimated total first cost for ecosystem restoration of $1,338,554,000 and provides restoration outputs of 6,782 AAHUs. In addition to ecosystem restoration, the recommended LPP includes approximately $18,054,000 for recreation, for an estimated total first cost of $1,356,608,000. The non-federal sponsor would be responsible for the operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) of the respective ecosystem restoration and recreation features after construction, a cost currently estimated $2,530,000 on an average annual basis.

6. The non-federal sponsor has voluntarily offered to forgo reimbursement for the costs of lands, easements, rights of way, relocations, and disposal sites (LERRD) that exceed its statutory share of total ecosystem restoration costs. The Assistant Secretary of the Army for Civil Works (ASA(CW)) has granted a policy exception to allow the non-federal sponsor to forgo such reimbursement.

7. The ecosystem restoration features have an estimated first cost of $1,338,554,000. The first cost of LERRD is estimated at $771,025,000. The total ecosystem restoration cost includes $12,250,000 for monitoring and adaptive management. The recreation features have an estimated first cost of $18,054,000, with the federal and non-federal shares estimated at $9,027,000 and $9,027,000 respectively.

8. Based on a 3.375 percent discount rate and a 50-year period of analysis, the total average annual costs of the project is estimated to be $61,485,000, with $60,507,000 for the ecosystem restoration purpose and $978,000 for the recreation purpose. Ecosystem restoration benefits for the selected plan include generating an estimated 6,782 AAHUs and restoring 719 acres. Average annual recreation benefits are estimated to be $3,510,000, with net average annual benefits of $2,532,000 and a benefit/cost ratio of 3.59.

9. The recommended plan was formulated and developed in coordination and consultation with various federal, state and local agencies to restore the ecosystem in and along the 11-mile stretch of the river within project constraints. Study formulation looked at a wide range of structural and non-structural alternatives. The study was conducted using a watershed perspective to examine ecosystem changes and connections within the watershed. CHAP and our cost effectiveness and incremental cost analysis techniques were used to formulate and evaluate restoration solutions. Goals and objectives included in the Environmental Operating Principles and the Campaign Plan of the U.S. Army Corps of Engineers have been integrated into the Los Angeles River ecosystem restoration study process. The recommended plan would have substantial beneficial impacts for biological, water, aesthetic, and recreation resources and for environmental justice. The recommended plan would result in unavoidable significant adverse impacts to existing land use designations by converting land currently used for industrial purposes to riparian habitat.

10. The project would modify features of an existing Federal project, the Los Angeles County Drainage Area (LACDA) project, authorized by the Flood Control Acts of 1936, 1938, and 1941, as amended. The modifications to this project will not impair the purposes for which it was

authorized or the benefits it currently provides. The recommended plan is not currently estimated to result in an incremental increase in Corps OMRRR costs for the existing LACDA project maintenance activities. Sea level rise is not expected to directly affect this project.

11. In accordance with Corps Engineer Circular (EC) 1165-2-214 (12 December 2012) on review of decision documents, all technical, engineering and scientific work underwent an open, dynamic and rigorous review process to ensure technical quality. This included District Quality Control (DQC), Division Quality Assurance (DQA) reviews, Agency Technical Review (ATR), an Independent External Peer Review (IEPR) (Type I), Cost Engineering Review and Certification, policy and legal compliance review, and model review and approval. All concerns of the ATR have been addressed and incorporated in the final report. The IEPR was completed by Battelle Memorial Institute. Battelle selected and managed an IEPR panel of experts with technical expertise in arid region riverine system ecology, socioeconomics, hydrologic and hydraulic (H&H) modeling, and geotechnical engineering. A total of 18 comments were documented. In summary, the panel felt that the engineering, economics and environmental analysis were adequate. However, following public review of the draft feasibility report, the panel recommended additional connectivity analysis be conducted and documented in the final report. The IEPR review comments and the recommended connectivity analysis did not result in significant changes to the plan formulation, engineering assumptions, and environmental analyses that supported the decision-making process and plan selection. All comments from the above referenced reviews have been addressed and incorporated in the final documents. Overall, the reviews resulted in improvement to the technical quality of the report. Since the project would modify features of the LACDA, which has associated levees, a safety assurance review (Type II IEPR) will be conducted during the design and construction phase of the project.

12. Washington-level review indicates that the project recommended by the reporting officers is technically sound, environmentally and socially acceptable, and economically justified. The plan complies with all essential elements of the U.S. Water Resources Council's 1983 Economic and Environmental Principles and Guidelines for Water and Land Related Resources Implementation Studies and complies with other administrative and legislative policies and guidelines. The views of interested parties, including federal, state, and local agencies have been considered.

13. I concur with the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend that the plan for ecosystem restoration and recreation for the Los Angeles River, California, be authorized in accordance with the reporting officers' recommended plan at an estimated project first cost of $1,356,608,000 with such modifications as in the discretion of the Chief of Engineers may be advisable. My recommendation is subject to cost sharing, financing, and other applicable requirements of federal and state laws and policies, including Section 103 of WRDA 1986, as amended (33 U.S.C. 2213). Accordingly, the non-federal sponsor must agree with the following requirements prior to project implementation.

14. The recommendation contained herein reflects the information available at this time and current departmental policies governing formulation of individual projects. It does not reflect program and budgeting priorities inherent in the formulation of a national civil works

construction program or the perspective of higher review levels within the executive branch. Consequently, the recommendation may be modified before it is transmitted to the Congress as a proposal for authorization and implementation funding. However, prior to transmittal to Congress, the non-federal sponsor, the state, interested federal agencies, and other parties will be advised of any significant modifications and will be afforded an opportunity to comment further.

THOMAS P. BOSTICK
Lieutenant General, U.S. A.
Chief of Engineers